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REMARKS

Claims 22-24, 26, 28-31 are pending in the application with new claims 30 and 31 added herein.

Claims 22-24, 28, and 29 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Chi in view of Schugraf. Applicant requests reconsideration.

Claim 22 sets forth a capacitor construction including, among other features, an opening in an insulative layer over a substrate, a hemispherical grain polysilicon layer, a first capacitor electrode containing TiN, a capacitor dielectric layer, and a second capacitor electrode. Page 2 of the Office Action alleges that Chi discloses every limitation of claim 22 except for the first capacitor electrode containing TiN and relies upon Schugraf for the missing subject matter. Applicant traverses on the grounds that Chi fails to disclose or suggest a capacitor construction that includes a hemispherical grain polysilicon layer along with the other structural features of a capacitor construction, as set forth in claim 22.

Page 2 of the Office Action alleges that Chi's HSG silicon 203 discloses the claimed hemispherical grain polysilicon layer. Applicant notes that column 2, lines 48-50 of Chi describes HSG silicon 203 formed on amorphous silicon sidewall spacers 201. However, column 3, lines 4-13 of Chi expressly require complete oxidation of HSG silicon 203 along with amorphous silicon sidewall spacers 201. At such point, the construction in Chi no longer includes a hemispherical grain polysilicon layer. Instead, the structures

10/050,334

shown in Fig. 2 designated with reference numerals 201 and 203 consist entirely of silicon oxide. Accordingly, the subsequent processing shown in Figs. 3 and 4 of Chi along with the associated text does not produce a capacitor construction, as set forth in claim 22, containing a hemispherical grain polysilicon layer.

Column 3, lines 22-25 of Chi expressly state that polysilicon layer 301 is formed over "fully oxidized HSG silicon nodules." Sidewall spacers 201 are also fully oxidized. At least for the asserted reasons, Chi fails to disclose or suggest the capacitor construction set forth in claim 22. Even though Chi discloses an intermediate construction just prior to that shown in Fig. 2 that contains HSG silicon 203 formed on amorphous silicon sidewall spacers 201, such intermediate construction does not include the first capacitor electrode, capacitor dielectric layer, or second capacitor electrode of claim 22.

Review of Chi fails to reveal any motivation to leave fully oxidized HSG silicon 203 and amorphous silicon sidewall spacers 201 as silicon instead of converting them to silicon oxide. Also, the mere fact that the prior art might be modified does not make such a modification obvious unless the prior art suggests the desirability of the modification. Chi does not disclose the desirability of such modification. Instead, such a modification would render Chi inoperable for its intended purpose or change its principle of operation. Accordingly, no suggestion or motivation may be considered to exist to make such a modification.

10/050.334

Schugraf does not disclose or suggest and is not alleged to disclose or suggest subject matter missing from Chi. Accordingly, combination of the references cannot be considered to disclose or suggest subject matter that is absent from both. At least for such reasons, claim 22 is patentable over Chi in view of Schugraf. Claims 23, 24, and 30 depend from claim 22 and are patentable at least for such reason as well as for the additional limitations of such claims not disclosed or suggested.

Claim 28 sets forth a capacitor construction that includes, among other features, an opening in an insulative layer over a substrate, a HSG polysilicon layer, a first capacitor electrode containing TiN, a capacitor dielectric layer, and a second capacitor electrode. As may be appreciated from the discussion above regarding the deficiencies Chi and Schugraf as applied to claim 22, the cited combination fails to disclose or suggest the claimed HSG polysilicon layer in a capacitor construction. Accordingly, claim 28 is patentable over Chi in view of Schugraf. Claims 29 and 31 depend from claim 28 and are patentable at least for such reason as well as for the additional limitations of such claims not disclosed or suggested.

Claim 26 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Chi in view of Schugraf as applied to claims 22-24 above, and further in view of Hwang (U.S. Patent No. 6,207,561). Applicant traverses. Claim 26 depends from claim 22, the subject matter of which is discussed above. Hwang does not disclose or suggest and is not alleged to disclose or suggest

10/050,334

the subject matter of claim 22 missing from Chi in view of Schugraf. At least for such reason, claim 26 is patentable over the cited combination.


Applicant herein adds new claims 30 and 31 depending respectively from claims 22 and 28 and setting forth that the first capacitor electrode containing TiN is on and in contact with the respective polysilicon or HSG polysilicon layer. The subject matter of new claims 30 and 31 is supported at least by Figs. 4-6 of the present specification and the text associated therewith.

Applicant herein establishes adequate reasons supporting patentability of claims 22-24, 26, and 28-31 and requests allowance of all pending claims in the next Office Action.

Respectfully submitted,

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